

## ABSTRACT OF THE DISCLOSURE

An adsorbent composition containing a modified carbonaceous material capable of adsorbing an adsorbate is disclosed, wherein at least one organic group is attached to the carbonaceous material. Furthermore, methods to increase the adsorption capacity of a carbonaceous material capable of adsorbing an adsorbate and methods to adsorb an adsorbate using the above-described adsorbent composition are also disclosed.

5